UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,853	11/19/2001	John Teloh	SMQ-082CN1/P6396CNT	9384

959   7590   12/31/2003

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EXAMINER
BETIT, JACOB F

ART UNIT	PAPER NUMBER
2175	3

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/988,853	TELOH ET AL.
	Examiner	**Art Unit**	
	Jacob F. Betit	2175	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-51_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-51_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _19 November 2001_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.
13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet, 37 CFR 1.78.
    a) ☐ The translation of the foreign language provisional application has been received.
14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "80" has been used to designate both the final step of figure 3 and the scoreboard of figure 4. The reference character "80" should be changed in one of these figures. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2.   Figure 2 is objected to because the word "stowage" is used instead of the word "storage" in step 30 of figure 2. The word "stowage" should be replaced with the word --storage--. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3.   The arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

        Section headings are underlined throughout the disclosed specification, and they appear in lower case lettering. Section headings should not be <u>underlined</u> and/or **boldfaced**, and they should appear in upper case lettering. The underlined and

boldfaced print should be replaced with a regular font, and all section headings

should appear in upper case lettering. Appropriate corrections are required

according to the guidelines provided below:

4.   The following guidelines illustrate the preferred layout for the specification of a

utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should
include the following sections in order. Each of the lettered items should appear in
upper case, without underlining or bold type, as a section heading. If no text follows the
section heading, the phrase "Not Applicable" should follow the section heading:

    (a) TITLE OF THE INVENTION.
    (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
    (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
        DEVELOPMENT.
    (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
        COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer
        program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),
        and tables having more than 50 pages of text are permitted to be
        submitted on compact discs.) or
        REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
        "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
    (e) BACKGROUND OF THE INVENTION.
        (1) Field of the Invention.
        (2) Description of Related Art including information disclosed under 37
        CFR 1.97 and 1.98.
    (f) BRIEF SUMMARY OF THE INVENTION.
    (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
    (h) DETAILED DESCRIPTION OF THE INVENTION.
    (i) CLAIM OR CLAIMS (commencing on a separate sheet).
    (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
    (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A
        "Sequence Listing" is required on paper if the application discloses a
        nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if
        the required "Sequence Listing" is not submitted as an electronic
        document on compact disc).

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6.   Claims 6, 18, 31, and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. "Without a volume manager facility" was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

7.   Claims 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. "Without a volume manager" was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 1-4, 6-10, 12-16, 18, 20-23, 25-29, 31-35, 37-41, 43-46, and 48-50 are

rejected under 35 U.S.C. 102(e) as being anticipated by Sicola et al. (U.S. patent No.

6,629,264).

As to claim 1, Sicola et al. teaches in a storage network (see column 7, lines 1-

11), a method for replicating data in the storage network (see column 1, lines 5-10), the

method comprising the steps of:

identifying to a first data replication facility at a first programmable electronic

device in the storage network a first structure and a second structure held by a storage

device locally accessible to the first programmable electronic device (see abstract,

where "storage device" is read on "data storage array", and an array holds two or more

storage structures);

instructing the first data replication facility to logically group the first structure and

the second structure from the storage device to create a group (see column 20, lines

38-55, where "group" is read on "set");

generating a replica of the group at the first data replication facility (see column 8, line 52 through column 9, line 7); and

forwarding the replica in accordance with a communication protocol from the first data replication facility at the first programmable electronic device to a second data replication facility at a second programmable electronic device in the storage network for storage by a second storage device (see column 6, lines 1-13, and see column 9, lines 1-5).

As to claim 8, Sicola et al. teaches a method for replicating data (see column 1, lines 6-10) in a storage network to update one or more data structures of a remote storage device (see column 6, line 66 through column 7, line 12), the method comprising the steps of:

instructing a first data replication facility of a first electronic device in the storage network to logically associate a first data structure and a second data structure held by a locally accessible storage device, wherein the logical association defines a group (see abstract and column 20, lines 38-55, where "storage device" is read on " data storage array, an array holds two or more storage structures, and "group" is read on "set");

generating a replica of the first data structure and the second data structure as the group (see column 8, line 52 through column 9, line 7); and

outputting the replica in accordance with a data communications protocol from the first replication facility of the first electronic device to a second replication facility of a

second electronic device in the storage network to update the one or more data

structures of the remote storage device (see column 6, lines 1-13, and see column 9,

lines 1-5).

As to claim 13, <u>Sicola et al.</u> teaches a readable medium holding programmable

electronic device readable instructions (see column 9, lines 10-34, where

"programmable electronic device readable instructions" is read on "software" and it is

well know in the art that software is stored on a readable medium) for executing a

method for replicating data in a storage network (see column 1, lines 5-10), the method

comprising the steps of:

identifying to a first data replication facility at a first programmable electronic

device in the storage network a first structure and a second structure held by a storage

device locally accessible to the first programmable electronic device (see abstract,

where "storage device" is read on "data storage array", and an array holds two or more

storage structures);

instructing the first data replication facility to group the first structure and the

second structure from the storage device.(see column 20, lines 38-55, where "group" is

read on "set");

generating a replica of the first structure and the second structure as a group at

the first data replication facility (see column 8, line 52 through column 9, line 7); and

asserting the replica in accordance with a communication protocol from the first

data replication facility at the first programmable electronic device to a second data

replication facility at a second programmable electronic device in the storage network

for storage by a second storage device locally accessible to the second programmable

electronic device (see column 6, lines 1-13, and see column 9, lines 1-5).

As to claims 2 and 14, Sicola et al. teaches further comprising the step of,

forwarding from the first data replication facility at the first Programmable electronic

device to the second data replication facility at the second programmable electronic

device information identifying a storage location at the second storage device at which

to store the replica (see column 20, lines 41-44).

As to claims 3 and 15, Sicola et al. teaches wherein the first programmable

electronic device forwards the replica to the second programmable electronic device in

a synchronous manner (see column 11, line 27 through column 12, line 3).

As to claims 4 and 16, Sicola et al. teaches wherein the first programmable

electronic device forwards the replica to the second programmable electronic device in

an asynchronous manner (see column 12, line 6 through column 13, line 41).

As to claims 6, 12, and 18, Sicola et al. teaches wherein the first programmable

electronic device and the second programmable electronic device in the storage

network operate without a volume manager facility (There is no mention of a "volume

manager facility" in the disclosed specification of Sicola et al., therefore, it is assumed

that Sicola et al. do not use a "volume manager facility").

As to claims 7 and 20, Sicola et al. teaches wherein the first structure comprises a first logical volume and the second structure comprises a second logical volume (see column 3, lines 18-26).

As to claim 9, Sicola et al. teaches further comprising the steps of, packaging with the replica, information identifying one or more storage locations for storage of the replica on the remote storage device (see column 20, lines 41-44).

As to claim 10, Sicola et al. teaches further comprising the steps of, instructing the first data replication facility to preserve a write ordering of the first data structure and the second data structure in the group (see column 12, lines 49-50).

As to claim 21, Sicola et al. teaches, in a storage network (see column 7, lines 1-11), a method to create a replica of selected data in the storage network (see column 1, lines 5-10), the method comprising the steps of:

instructing a first data replication facility at a first electronic device in the storage network to track changes to one or more storage locations of a first storage medium that correspond to the selected data (see column 12, lines 17-34);

instructing the first data replication facility to generate the replica of the selected data based on the tracked changes to the one or more locations of the first storage

medium (see column 12, lines 47-59);

placing the replica of the selected data in a data structure (see column 12, lines 50-52); and

forwarding the replica of the selected data in accordance with a communication protocol from the data structure to a second data replication facility at a second electronic device in the storage network for storage of the replica on a second storage medium by the second electronic device (see column 12, lines 47-50).

As to claim 33, Sicola et al. teaches, a readable medium holding programmable electronic device readable instructions (see column 9, lines 10-34, where "programmable electronic device readable instructions" is read on "software" and it is well know in the art that software is stored on a readable medium) for executing a method to create a replica of selected data in a storage network (see column 1, lines 5-10), the method comprising the steps of:

instructing a first data replication facility at a first programmable electronic device in the network to track changes to one or more areas of a first storage device in communication with the first programmable electronic device, wherein the one or more areas correspond to the selected data (see column 12, lines 17-34);

instructing the first data replication facility to generate the replica of the selected data based on the tracked changes to the one or more areas of the first storage device (see column 12, lines 47-59);

placing the replica of the selected data in a data structure (see column 12, lines

50-52); and

forwarding the replica of the selected data in accordance with a communication

protocol from the data structure to a second data replication facility at a second

programmable electronic device in the storage network for storage of the replica on a

second storage device in communication with the second programmable electronic

device (see column 12, lines 47-50).

As to claims 22 and 34, Sicola et al. teaches further comprising the step of,

sending an instruction from the first data replication facility at the first electronic device

to the second data replication facility at the second electronic device to initiate a

process for receiving and storing the replica of the selected data (see column 9, lines

21-34, where it is inherent that the PPRC manager must send an instruction to the

second device in order to initiate the connection and heartbeat with the remote

controller).

As to claims 23 and 35, Sicola et al. teaches further comprising the step of,

halting the generation of the replica of the selected data until the replica held by the

data structure is forwarded from the data structure to the second data replication facility

at the second electronic device in the storage network (see column 14, line 33 through

column 15, line 58).

As to claims 25 and 37, Sicola et al. teaches further comprising the step of,

identifying to the first data replication facility at the first electronic device in the storage network the selected data held by the first storage medium in communication with the first electronic device (see column 20, lines 38-55).

As to claims 26 and 38, Sicola et al. teaches wherein the data structure comprises a queue (see column 14, lines 45-58, where "queue" is read on "log").

As to claims 27 and 39, Sicola et al. teaches wherein the first electronic device performs the forwarding of the replica of the selected data from the data structure to the second data replication facility at the second electronic device in a first in first out (FIFO) manner (see column 14, lines 59-65, where "FIFO" is read on "in order").

As to claims 28 and 40, Sicola et al. teaches wherein the first electronic device performs the forwarding of the replica of the selected data from the data structure to the second data replication facility at the second electronic device in a synchronous manner (see column 11, line 27 through column 12, 3).

As to claims 29 and 41, Sicola et al. teaches wherein the first electronic device performs the forwarding of the replica of the related data from the data structure to the second data replication facility of the second electronic device in an asynchronous manner (see column 12, line 5 through column 13, line 41).

As to claims 31 and 43, <u>Sicola et al.</u> teaches wherein the first electronic device and the second electronic device operate without a volume manager facility (There is no mention of a "volume manager facility" in the disclosed specification of <u>Sicola et al.</u>, therefore, it is assumed that <u>Sicola et al.</u> do not use a "volume manager facility").

As to claims 32 and 44, <u>Sicola et al.</u> teaches wherein the one or more locations of the first storage medium comprise one of a track, a sector, a logical volume and a logical offset into the first storage medium (see column 19, line 58 through column 20, line 4).

As to claim 45, <u>Sicola et al.</u> teaches a method for replicating data (see column 1, lines 6-10) in a distributed network to update a remote storage device with data from a local storage device (see column 6, line 66 through column 7, line 12), the method comprising the steps of:

instructing a first data replication facility of a first electronic device in the distributed network to track one or more locations of a local storage device that correspond to one or more identified volumes (see column 12, lines 17-34);

grouping each of the one or more identified volumes into a group by the first data replication facility (see column 20, lines 38-55, where "group" is read on "set");

generating a replica of the group at the first data replication facility (see column 12, lines 47-59); and

asserting the replica in accordance with a communication protocol toward a

second replication facility of a second electronic device in the distributed network to

update the remote storage device (see column 12, lines 47-50).

As to claim 46, Sicola et al. teaches further comprising the step of, sending a

command from the first data replication facility to the second data replication facility of

the second electronic device to initiate receipt of the replica (see column 9, lines 21-34,

where it is inherent that the PPRC manager must send a command to the second

device in order to initiate the connection and heartbeat with the remote controller).

As to claims 48, Sicola et al. teaches further comprising the step of, sending from

the second data replication facility to the first data replication facility an indication that

the update to the remote storage device completed (see column 11, lines 60-63).

As to claim 49, Sicola et al. teaches further comprising the step of, writing the

replica to a local queue for temporary storage before the asserting of the replica in

accordance with the communication protocol toward the second replication facility of the

second computer occurs (see column 12, lines 18-34).

As to claim 50, Sicola et al. teaches further comprising the step of, identifying to

the first data replication facility of the first electronic device in the distributed network the

one or more volumes of the data for the replicating of data to update the remote storage

device (see column 20, lines 38-55).

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims 5, 11, 17, 19, 30, and 42 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sicola et al. (U.S. patent No. 6,629,264 B1) in view of Wahl et al.

(U.S. patent No. 6,324,654 B1).

As to claims 5, 11, and 17 Sicola et al. does not teach wherein the

communication protocol comprises the Transmission Control Protocol/Internet Protocol

(TCP/IP) protocol suite.

Wahl et al. teaches a computer network remote data mirroring system that writes

update data both to a local data device and to a remote system (see abstract) in which

he teaches wherein the communication protocol comprises the Transmission Control

Protocol/Internet Protocol (TCP/IP) protocol suite (see column 5, lines 14-38).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time the invention was made to have modified Sicola et al. to include wherein the

communication protocol comprises the Transmission Control Protocol/Internet Protocol

(TCP/IP) protocol suite.

It would have been obvious to a person having ordinary skill in the art at the time

the invention was made to have modified <u>Sicola et al.</u> by the teachings of <u>Wahl et al.</u> because wherein the communication protocol comprises the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite would allow the transfer of data for the data replication system to go over common networks such as LANs, the Internet, and other WANs.

As to claim 19, <u>Sicola et al.</u> does not teach wherein the first, structure comprises a first group of records and second structure comprises a second group of records.

<u>Wahl et al.</u> teaches wherein the first, structure comprises a first group of records and second structure comprises a second group of records (see abstract and column 12, lines 38, where it is understood in the art that a database contains a plurality of records, and if it is spread across several disks each disk with contain a group of the database records).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Sicola et al.</u> to include wherein the first, structure comprises a first group of records and second structure comprises a second group of records.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Sicola et al.</u> by the teachings of <u>Wahl et al.</u> because wherein the first, structure comprises a first group of records and second structure comprises a second group of records would ensure chronological coherency to be maintained on the mirror devices (see <u>Wahl et al.</u>, column 12, lines 15-28).

As to claims 30 and 42, <u>Sicola et al.</u> does not teach wherein the communication protocol comprises the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite.

<u>Wahl et al.</u> teaches wherein the communication protocol comprises the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite (see column 5, lines 14-38).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Sicola et al.</u> to include wherein the communication protocol comprises the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Sicola et al.</u> by the teachings of <u>Wahl et al.</u> because wherein the communication protocol comprises the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite would allow the transfer of data for the data replication system to go over common networks such as LANs, the Internet, and other WANs.

12.   Claims 24, 36, 47, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Sicola et al.</u> (U.S. patent No. 6,629,264 B1) in view of <u>Gagne et al.</u> (U.S. patent No. 6,209,002 B1).

As to claims 24 and 36, <u>Sicola et al.</u> does not teach further comprising the step of, packaging with the replica of the selected data information that identifies a storage location for storage of the replica of the selected data on the second storage medium.

<u>Gagne et al.</u> teaches a data storage facility that mirrors data onto at least three different remote sites (see abstract) in which he teaches further comprising the step of, packaging with the replica of the selected data information that identifies a storage location for storage of the replica of the selected data on the second storage medium (see column 8, lines 22-52).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Sicola et al.</u> to include further comprising the step of, packaging with the replica of the selected data information that identifies a storage location for storage of the replica of the selected data on the second storage medium.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Sicola et al.</u> by the teachings of <u>Gagne et al.</u> because further comprising the step of, packaging with the replica of the selected data information that identifies a storage location for storage of the replica of the selected data on the second storage medium would enable the copy program to transfer data to the appropriate destination (see <u>Gagne et al.</u>, column 8, lines 30-32).

As to claim 47, <u>Sicola et al.</u> does not teach further comprising the step of, packaging with the replica information that indicates a storage location for each volume

in the replica for storage on the remote storage device.

Gagne et al. teaches further comprising the step of, packaging with the replica information that indicates a storage location for each volume in the replica for storage on the remote storage device (see column 8, lines 22-52).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Sicola et al. to include further comprising the step of, packaging with the replica information that indicates a storage location for each volume in the replica for storage on the remote storage device.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Sicola et al. by the teachings of Gagne et al. because further comprising the step of, packaging with the replica information that indicates a storage location for each volume in the replica for storage on the remote storage device would (see column 8, lines 22-52).

As to claim 51, Sicola et al. as modified, teaches wherein the information comprises one of a volume name and a volume number (see Sicola et al., column 12, lines 37-55).

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent No. 6,544,347 to <u>Yanai et al.</u> for teaching automatically providing and maintaining identical secondary data on a geographically remote secondary data storage device.

U.S. patent No. 6,662,198 B2 to <u>Satyanarayanan et al.</u> for teaching asynchronously sharing, backing up, and distributing data based on immutable entries.

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob F. Betit whose telephone number is (703) 305-3735. The examiner can normally be reached on Monday through Friday 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (703) 305-3830. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

jfb
23 December 2003

SAM RIMELL
PRIMARY EXAMINER